

**For each question, you need to find the answer and show your work. Each problem is worth 3 points: one for the correct answer and two for showing your work. For some problems, you may just need to write out how you know you have the correct answer.**

1. Find the slope of the line passing through  $(3, 5)$  and  $(4, 11)$ .
2. Find the slope of the line passing through  $(-1, 4)$  and  $(2, 6)$ .
3. Find the slope of the line passing through  $(-9, 2)$  and  $(1, -6)$ .
4. Find the slope and y-intercept of the graph of the equation  $4x - y = 10$ .
5. Find the slope and y-intercept of the graph of the equation  $3y = 9x + 3$ .

6. Find the slope and y-intercept of the graph of the equation  $x + 2y = 10$ .

7. What do the slopes tell you about the two lines whose equations are  $y = -2x + 7$  and  $y = -2x - 3$ ?

8. What must be the value of  $c$  so that a line passing through the points  $(2, 8)$  and  $(c, 4)$  has a slope of 2?

**Open-Ended Question: Make sure as you answer the open-ended question that you show your work AND explain how you know you are doing the correct work. YOU MUST EXPLAIN WHAT YOU ARE DOING!!!**

Use the data in the table to create a graph (use graph paper) and answer the questions. The data gives the number of people admitted to a museum over the course of a day. The museum's hours are 9:00 – 4:00.

<i>Time of Day</i>	<i>Total People Attended</i>
9:00	0
10:00	30
11:00	50
12:00	53
1:00	104
2:00	120
3:00	175
4:00	200

A. What would a slope of zero between two consecutive hours represent? Explain your reasoning.

B. Could a line between two consecutive hours have a negative slope? Explain your reasoning.